

REMARKS

Applicant appreciates the careful consideration given by the Examiner in the Office Action dated June 22, 2007. In the Action, claims 1-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,586,996 issued to Fanous et al (hereinafter "Fanous"). Applicant respectfully traverses the rejections, as discussed below.

In this current submission, claims 1 and 9 are amended. Claims 2, 6, 10, and 14 are canceled. Claims 17 and 18 are newly presented. Claims 1, 3-5, 7-9, 11-13, and 15-18 are therefore currently pending.

35 U.S.C. §103(a)

Although Fanous discusses many of the components found in embodiments of the present invention, a careful inspection of the reference reveals that the passages cited by the Action do not read on several features of the claimed invention. While Fanous peripherally discusses the architecture of a receiving tuner, the reference is directed to a fundamentally different apparatus and associated functions. Specifically, Fanous addresses issues that arise in connection with *passive signal splitting*. Fanous describes the degradation in performance of multiple downstream tuners due to insertion losses occurring upstream. See Fanous at column 4, lines 49-55. In addition, Fanous further attempts to address the distortion problem that arises by the conventional solution to the passive splitting problem, which is to place a fixed-gain low-noise amplifier upstream to the splitter. See Fanous at column 4, line 66 – column 5, line 17.

Fanous' solution involves replacing the fixed-gain amplifier with an upstream single variable-gain amplifier 302 (hereinafter "VGA"), and further adding a power splitter 306, in combination with optional variable gain amplifiers (308-312) outside the tuner. See Figure 3. In a more detailed embodiment that is illustrated by Figure 4, Fanous suggest utilizing a "single active amplifier splitter" 406 comprised of two stages of VGA's (408, 418-422), both upstream

to multiple tuners (430,460,470). An automatic gain control (AGC) block 454 provides gain control to the first stage VGA. Gain control to the second stage amplifiers is provided by demodulators 451-453 in feedback to the second-stage amplifiers.

Fanous further discloses an embodiment of their invention which modifies the “single active amplifier splitter” such that the gain controls of the second stage amplifiers are no longer controlled by the demodulators, but rather are controlled by a single independent AGC 1406 located inside the amplification module 1402. See Figure 14. In this embodiment, as with each of the other embodiments in Fanous, the gain control disclosed does not regulate any amplifier within the tuner itself, but rather only those operating within the splitter mechanism. In fact, Fanous makes the point of noting that the amplifiers disclosed therein are *specially designed to be located outside the tuner*. See Fanous at column 5, lines 44-46. This distinction is so easily seen because Fanous is directed to the particular problem arising when *multiple tuners are operational in a single system*.

This and other important distinctions between Fanous and the presently claimed invention can be seen by analyzing the claims on a feature-by-feature basis. Thus with respect to claim 1, the Action initially suggests that column 7, lines 16-60 teach that a down-converting unit of a tuner converts a high frequency signal into a *baseband signal*. However a close inspection of this portion of the reference reveals that the Action is mistaken. Although the VGA 442 is disclosed as a low frequency amplifier, it is not disclosed that the resulting signal is in fact a baseband signal. Further, downstream to the VGA 442, the signal is further passed through to an intermediate frequency filter 444 presumably raising the signal back to an intermediate frequency. In contrast, embodiments of the present invention disclose that an incoming RF signal is *specifically converted into a baseband signal*.

A second major distinction between Fanous and the presently claimed invention relates to the feature found in the second paragraph of claim 1 describing the adjusting unit. The Action indicates that amplifiers 1408-1412 in Fanous make up the adjusting unit referred to in the claim.

However, it is clear as described above that the aforementioned amplifiers are *not a part of the tuner*. Thus the gain control *does not regulate the adjusting unit (or any device) within the tuner*. Column 15, lines 18-21 of Fanous further emphasize that the AGC placement is specifically designed so as control the signal as output *to the tuner*, as opposed to controlling gain *further downstream*.

A third distinction between the claimed invention and Fanous relates to the amplifier of claim 1 that adjusts the baseband signal and the controlling unit, which controls the gain thereof. The Office Action points to amplifier 442 of Fanous as reading on the recited amplifier. However, amplifier 442 is, quite simply, *not adjusting a baseband signal*. As discussed above, the amplifier is at best lowering the frequency of an incoming signal.

Applicant would like to also point out that the Office Action's attempt at combining embodiments of Fanous actually eliminates the cited "controlling unit" from consideration. The Action states that the controlling unit 446 controls the gain of the amplifier 442. However 446 is simply the *demodulator*. In the embodiment illustrated by Figure 14 (which the Action seeks to combine with Figure 4), the demodulator is no longer responsible for gain control to amplifier 442. See column 15, lines 32-36, which expressly point out that the demodulator does not provide *any gain control* in that embodiment. This is because gain control in Figure 14 is performed at the pre-tuner amplification stage. In other words, when the autonomous, independent gain control of Figure 14 is provided, the gain control of the demodulator is removed. Thus the two embodiments of Fanous cannot simultaneously disclose the features found in claim 10. MPEP §2143 states that, "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)" Since combining figures 4 and 14 of Fanous by definition must change the principles of operation, the rejection under §103 is not *prima facie* obvious.

To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. In *re* *Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Additionally, there must be a reason why one of ordinary skill in the art would modify the reference or combine reference teachings to obtain the invention. *KSR Intl Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). There must be a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Id.*

Applicant asserts that the Office Action fails to make out a prima facie case of obviousness on two accounts. Initially, as discussed above, due to the distinctions of the present invention as claimed over Fanous, it can be said that Fanous fails to teach or suggest each and every feature as set forth in the claimed invention. Secondly, the stated motivation to combine embodiments of Fanous in order “to obtain independent control of the amplification within the baseband stage of the receiver” is not a statement of motivation, but rather a statement of the *result* of the combination itself. Such a statement takes the form of a conclusory, tautological statement of the type proscribed by *KSR v. Teleflex*, cited above. Further, since the combination of embodiments (ie, the demodulator is removed as an AGC source) in Fanous would change the principles of operation of the embodiments, there would really be no motivation to combine the embodiments. Applicant asserts that claim 1 is allowable for at least these reasons.

The entirety of the discussion above demonstrates that features in the independent claims of the present application are patentably distinct over Fanous, and that a prima facie case of obviousness has not been established. Still, in order to expedite prosecution, Applicant has further added the features of claims 2 and 10 to independent claims 1 and 9 respectively. The added feature provides that the signal provided to the controlling unit that is independent of the AGC controlling voltage is one that reflects frequency characteristics of a level of the received signal within a receivable frequency bandwidth. While column 15, lines 18-19 of Fanous

demonstrates that the AGC mechanism 1406 produces an output signals that is constant to each individual tuner, the reference does not disclose or suggest that it outputs a signal that reflects the frequency characteristics of the level of received signals within a receivable frequency band width.

With respect to claim 9, this claim recites the same features of the tuner as recited in claim 1. This claim is thus also allowable for at least the reasons set forth above related to these corresponding features, and/or for the additional features claimed therein.

As to claims 3-5, 7-8, 11-13, and 15-16, these dependent claims are also allowable for at least the reasons set forth above regarding their corresponding independent claims, and/or for the further features claimed therein.

With respect to claims 17-18, please note that these dependent claims further distinguish the invention over the cited prior art because even a cursory inspection of the Applicant's drawings reveals that an additional amplifier is downstream to the sections of the tuner that lower the incoming signal to baseband. This is seen in Applicant's figure 1, reference numerals 14-15 and figure 2, reference numeral 31. In contrast, the amplifier 442 in Fanous is not downstream to both the down-converting unit and the gain-adjusting unit of the tuner.

Conclusion

In view of the above amendment, Applicant believes the pending application is in condition for allowance, and solicits a notice thereof. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact James M. Alpert, Reg. No. 59,926 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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